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| 10/583,801 | 06/22/2006 | Kouji Hayashi | 90057/JLT | 4890 |

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EASTMAN KODAK COMPANY
PATENT LEGAL STAFF
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ROCHESTER, NY 14650-2201

EXAMINER

THOMPSON RUMMEL, PONDER N

| | |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1795

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01/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,801

Applicant(s)

HAYASHI ET AL.

Examiner

Ponder N. Thompson-Rummel

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-17 and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/6/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 21 are rejected under 35 U.S.C. 103(a) as being obvious over Sakurai et al. (WO2004/114019 wherein citations are from US 2006/0251987 equivalent) in view of Ishihara et al. (US 2005/0020710).

With regards to claims 1- 18, Sukurai et al discloses a negative-working photosensitive composition comprising:

- A. an infrared absorber (abstract and paragraphs [0015] and [0033]) that is a near infrared absorbing cationic dye represented by formula (I) (paragraph [0019] wherein D^+ represents a cationic dye have an absorption within a near infrared range and A^- represents an anion (paragraph [0019])), having a maximum absorption from 760 nm to 1200 nm (paragraph [0024]) and used from 0.5% to 15% by weight (paragraph [0038]);
- B. an organic boron compound, in amounts of 1 to 15% by weight (paragraph [0042]) that functions as a polymerization initiator by using in combination with the infrared absorber (abstract and paragraph [0016]) in which the

organic boron is an ammonium salt of a quaternary boron anion represented by formula (2) (paragraph [0020])

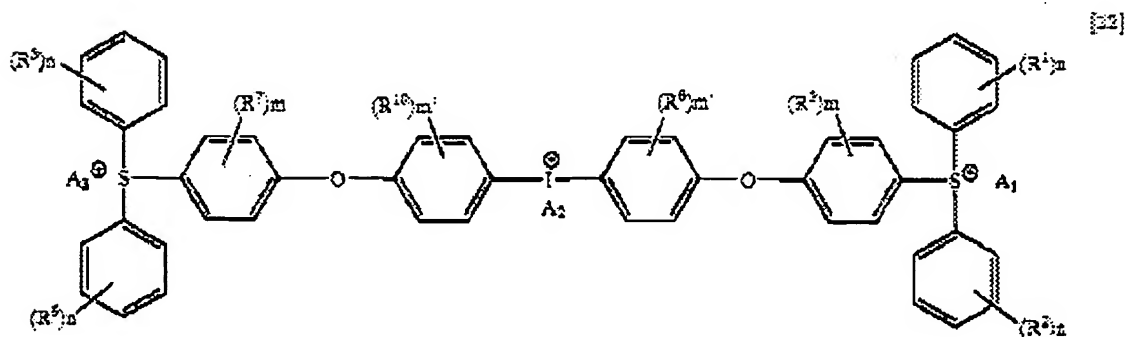
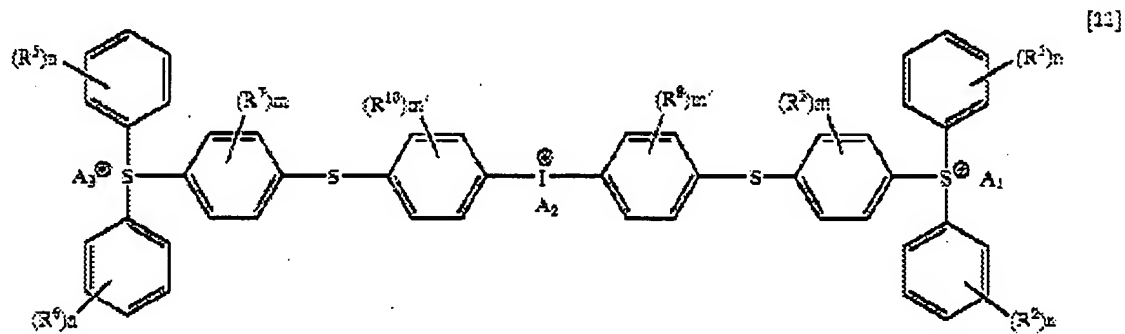


wherein R¹, R², R³ and R⁴ each represent an alkyl group, an aryl group an alkaryl group, an alkynyl group, and alicyclic group or unsaturated heterocyclic group where at least R¹-R⁴ s an alkyl group having 1 to 8 carbons and where R⁵-R⁸ represents an hydrogen atom, and alkyl group, and aryl group, and allyl group, an aralkyl group, etc (paragraph [0020]). Further, the organoboron can function as a polymerization initiator by irradiation with infrared rays to generate a radical (paragraph [0041]);

- C. a compound that have polymerizable unsaturated groups (paragraphs [0017], [0043] and [0044]) in amounts from 5 to 60% by weight (paragraph [0045]); and
- D. an alkali-soluble binder resin (paragraphs [0022] and [0052]) that comprise a copolymer with an aromatic hydroxyl group (paragraph [0051]) in amounts of 20 to 70% by weight (paragraph [0056]) Further, the binder resin includes alkali-soluble groups such as carboxyl group, phenolic hydroxyl group, sulfonic acid groups, phosphone group and imino group (paragraph [0053]).

The negative-working photosensitive lithographic printing plate comprises a support and a photosensitive layer containing the negative-working photosensitive composition of (A) – (C) formed on the support (abstract and paragraph [0067]). Also, the organoboron compound may be used in combination with known polymerization initiators used in the radical polymerization such as triazines (paragraph [0042]). However, Sakurai does not teach the use of an onium salt within the composition of the negative-working photosensitive composition.

Ishihara et al. discloses hybrid type onium salts of formulas [11] and [12] (paragraphs [0093] and [0094]) having an iodonium salt (I^+), a sulfonium salt (S^+), and an aromatic ring having a substituent in the molecule



wherein R^{10} is a halogen atom, an alkyl group, a haloalkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group or an amino group which may be substituted; R^1 to R^3 each independently a halogen atom, an alkyl group, a haloalkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group or an amino group which maybe substituted (paragraph [0011]), R^5 to R^7 each independently a halogen atom, an alkyl group, a haloalkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group or an amino group which maybe substituted (paragraph [0011]), R^8 , Q_1 and Q_2 is a direct-linkage, an oxygen atom, a sulfur atom or a lower alkylene chain, A_1 to A_3 , is a counter anion (paragraph [0012]); m and m' is an integer of 0 to 4 (paragraph [0012]); and n 's are each independently an integer of 0 to 5 (paragraph [0012]). The onium salts are useful as photopolymerization initiators and acid generators for a chemically amplified resist (paragraph [0267]). Because of the plurality of counter anions in the molecule, the onium salt provides the advantage of improved acid generation efficiency by irradiation. The use of the onium salt as a cationic photopolymerization initiator can also form a polymer with high hardness and resists with high sensitivity.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the hybrid type onium salts as disclosed by Ishihara in combination with the organic boron in the negative working photosensitive composition of Sakurai et al. to improve acid generation efficiency by irradiation and to increase the hardness and sensitivity of the resist composition.

With respect to claim 19, Sakurai et al. further discloses a method of forming a lithographic printing plate in which the plate is written with images in the photosensitive layer using laser light or irradiation (paragraph [0087]) and by developing the image to remove the non-image area (paragraph [0087]) using an aqueous alkali solution (paragraph [0088]).

Response to Arguments

3. Applicant's arguments, see remarks/Arguments, filed October 5, 2007, with respect to 35 U.S.C. 102(b) have been fully considered and are persuasive. The rejections of claims 1, 3, 7, 8, 10, 11, 13, 17, 18 and 19 have been withdrawn.

4. In response to applicant's argument that the classes of onium salts of Ishihara et al. is useful as a cationic or acid based polymerization of compositions for amplified resist, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

5. In response to applicant's argument that Ishihara et al is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, although the process in which the polymerization initiator as described by Ishihara

et al are different than those taught by the applicant, the onium salt would be expected to produce free radicals because of its structural similarities to the onium salt as mentioned within applicant's specification.

6. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the photoacid generator as described by Ishihara et al. is similar in structure properties as the acid generator described within the applicant's specification. This acid generator along with other acid generators, are well known in the art and can be used to further improve sensitivity and further accelerates polymerization when used.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ponder N. Thompson-Rummel whose telephone number is 571-272-9816. The examiner can normally be reached on Monday-Friday 7:00 am - 4:30 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PTR

A handwritten signature in black ink, appearing to read "Cynthia Kelly". The signature is written in a cursive, flowing style with a large initial "C" and a stylized "K".